

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

priority Application Serial No. ....09/465,492  
priority Filing Date ..... December 16, 1999  
Inventor..... V. Segal  
Assignee..... Honeywell International, Inc.  
priority Group Art Unit..... 1742  
priority Examiner ..... H. Wilkins III  
Attorney's Docket No. .... 30-5004 div2  
Title: Methods For Controlling The Texture Of Alloys Utilizing Equal Channel Angular  
Extrusion

**PRELIMINARY AMENDMENT**

To: Assistant Commissioner for Patents  
Washington, D.C. 20231

From: David G. Latwesen, Ph.D. (Tel. 509-624-4276; Fax 509-838-3424)  
Wells, St. John, Roberts, Gregory & Matkin P.S.  
601 W. First Avenue, Suite 1300  
Spokane, WA 99201-3828

**AMENDMENTS**

**In the Specification**

Please replace the title with:

-- Methods For Controlling The Texture Of Alloys Utilizing Equal Channel Angular  
Extrusion --.

At p. 1, replace the paragraph starting at line 6, with

--This application is a divisional of U.S. Patent Application Serial No. 09/465,492,  
filed December 16, 1999; which is related to Application No. 09/098,761, filed June 17,  
1998.--

**EL 844046665**

## **In the Claims**

Please replace the indicated claims with the following clean versions of the claims, in accordance with 37 C.F.R. § 1.121(c)(1)(i). Cancel all previous versions of any pending claim.

A marked up version showing amendments to any claims being changed is provided in one or more accompanying pages separate from this amendment in accordance with 37 C.F.R. § 1.121(c)(1)(ii). Any claim not accompanied by a marked up version has not been changed relative to the immediate prior version, except that marked up versions are not being supplied for any added claim or canceled claim.

## **CLAIMS**

Cancel Claims 1-36.

Please add new claims 37-41.

37. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least a route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected routes.

38. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route; and

recovery annealing the alloy at a temperature range and a time period determined for the alloy for obtaining substantially uniform grain size, global microstructure and texture.

39. (new) A method for influencing the texture evolution of a cast material alloy, comprising the steps:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route;

recovery annealing the alloy at a temperature range and a time period determined for the alloy; and

further recovery annealing the alloy at a temperature greater than maximum temperature of the temperature range.

40. (new) A method for controlling the texture of a cast material alloy, comprising the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route; and

post-extrusion processing the alloy to create a specific texture, a uniform grain size and a high texture strength for the alloy.

41. (new) A method for controlling the texture of a cast material alloy, which comprises the steps of:

providing a cast material comprising an alloy;

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for processing the alloy;

processing the alloy through the selected at least one route; and


further processing the alloy under equal channel angular extrusion in order to create a specific texture, a uniform grain size and a high texture strength for the alloy.

## REMARKS

Claims 1-36 are cancelled; new claims 37-41 are added; and claims 37-41 are pending in the application.

Respectfully submitted,

Dated: 7/24/01

By:   
David G. Latwesen, Ph.D.  
Reg. No. 38,533

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VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING  
PRELIMINARY AMENDMENT

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At p. 1, replace the paragraph starting at line 6 is amended as follows (underlines  
indicate insertions and strikeouts indicate deletions)

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**In the Claims**

The claims have been amended as follows. Underlines indicate insertions and  
~~strikeouts~~ indicate deletions.

Claims 1-36 are cancelled; and new claims 37-41 are added.